



## UNIREX EP

### PREMIUM QUALITY LITHIUM COMPLEX SOAP GREASES

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The UNIREX EP<sup>®</sup> brand represents a line of extremely versatile, long-life bearing greases. They are well-proven, superb performers suitable for use in a variety of industrial applications. They offer the following features and benefits:

- ◆ Each of the seven grades is formulated using an advanced lithium complex soap thickener.
- ◆ Five grades are formulated using leading-edge polymer enrichment technology. This enhances the already excellent adhesion tendency and water washout resistance of the product line.
- ◆ Unirex brand greases continue to be the benchmark against which other premium quality lithium complex greases are compared.

#### *Primary Applications*

**UNIREX EP 0** grease is formulated for open pit mining operations during the fall and spring seasons. The worked penetration of UNIREX EP 0 grease is midway between a NLGI 0 and 1 grade. UNIREX EP 0 grease slumps at temperatures as low as -20°C, which enhances its ability to lubricate at low temperatures. UNIREX EP 0 MOLY provides the same performance as UNIREX EP 0 with added solid lubricant for increases extreme pressure load carrying ability.

**UNIREX EP 1** grease is a general-purpose grease with a NLGI consistency rating of 1. It is proven as an excellent general purpose grease for heavy duty service including construction, mining, logging, cement and paper-making; all applications that can be extremely wet. Polymer enriched UNIREX EP 1 dispenses easily through grease guns or in most automatic systems under average equipment conditions as low as -15°C. Excellent load-carrying and anti-wear properties combine to ensure UNIREX EP 1 grease is capable of protecting shock loaded bearings to the limits of the metal's capacity for severe vibration and impact loads. UNIREX EP 1 is Imperial Oil's first recommendation for grease lubricated double spherical roller bearings. It is highly recommended for gear-type flexible couplings, where grease is specified.

**UNIREX LOTEMP EP** grease is formulated with low viscosity, low pour base oils and has a NLGI consistency between 1 and 2. It is recommended for winter conditions that require low operating or dispensing limits. With an operating range of -55°C to 110°C and a dispensing temperature limit of -40°C, Unirex Lotemp EP grease offers a combination of efficient start-up and reduced down-time on cold mornings plus effective summer protection.

**UNIREX LOTEMP MOLY UNIREX EP 0 MOLY & UNIREX EP 1 MOLY** greases offer performance characteristics similar to UNIREX LOTEMP EP UNIREX EP 0 and UNIREX EP 1 greases respectively, and each adds the extreme pressure protection of molybdenum disulfide. They are well suited in applications where metal is subject to sliding back and forth, as in hinge pins or the fifth wheel of large trucks.

**UNIREX EP 2** grease is the single most widely used Esso grease. It is especially popular in the resource and other industries where a heavier-bodied product is needed. It is a NLGI 2 grade grease recommended for hand packed or grease gun applications where greasing intervals are extended and minimal leakage is required. The combination of wear protection and advanced adhesion - even where moisture is at its worst - make polymer enriched UNIREX EP 2 grease particularly suitable for wheel bearings, grid-type flexible couplings, and all those applications outlined for UNIREX EP 1 grease.

### ***Performance Features***

#### **Adhesion & Water Resistance**

UNIREX grades have exceptional water tolerance, allowing moderate water absorption with only a minor change in penetration. Even after prolonged churning with water, UNIREX greases retain their consistency, adhesion and rust inhibiting properties. The five grades formulated with polymer enhancement technology offer even greater adhesion quality and resistance to water washout.

#### **High Dropping Point**

UNIREX greases have high dropping points ranging from about 200°C for UNIREX EP 0 to 260°C for UNIREX LOTEMP, 280°C for UNIREX EP 1 grade greases and 300°C for UNIREX EP 2. This allows their use at higher

temperatures than possible with greases made with most other soap types.

#### **Wide Temperature Ranges**

All UNIREX grades have wide operating and dispensing temperature ranges with specific grades available for either extremely hot or cold conditions.

#### **Rust Protection**

UNIREX greases provide superior protection against rust and metal corrosion as determined using ASTM D1743 and a 24-hour Copper Corrosion test at 100°C.

#### **Heat Stability**

UNIREX greases have good high temperature stability. This feature significantly extends greasing interval requirements.

#### **Extreme Pressure/Wear Protection**

All UNIREX EP greases contain additives combining extreme pressure resistance and wear protection under severe shock loading conditions. See the Timken Load and 4-Ball Wear/EP data on the Typical Properties table.

### ***Recommendations***

UNIREX EP 1 and UNIREX EP 2 have high Load Wear Index and Weld Point characteristics as determined by ASTM D 2596 and are especially recommended for the lubrication of heavy duty ball and roller bearings in shovels, drag lines, and drills for open pit mine service.

### ***Precautions***

Always protect UNIREX greases from contamination by dust or water. UNIREX greases are manufactured from high quality petroleum base stocks carefully blended with selected soaps and additives. As with all of our products, good personal hygiene and careful handling should always be practiced. Avoid prolonged contact to skin, splashing into the eyes, ingestion or vapour inhalation. High-pressure injection of any grease under the skin can cause serious delayed soft tissue damage and should be treated immediately by a physician. To avoid injection injuries, inspect greasing equipment regularly for worn hoses and fittings. Keep fingers away from the nozzle and ensure the nozzle is firmly in place before discharging the grease.

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Please refer to the Material Safety Data Sheet for further information.

Note: This product is not controlled under Canadian WHMIS legislation.

### Typical Properties

	EP 0	EP 0 MOLY	EP 1	EP 1 MOLY	EP 2	LOTEMP EP	LOTEMP MOLY
NLGI Grade	0.5	0.5	1	1	2	1.5	1.5
Operating Temp. Range, °C	-35 to 110	-35 to 110	-30 to 150	-30 to 150	-30 to 150	-55 to 110	-55 to 110
Minimum Dispensing Temp., °C (1)	-25	-25	-15	-15	-10	-40	-40
Worked Penetration, @ 25°C, mm/10	350	350	320	320	280	300	300
Dropping Point, °C	190	190	280	280	300	260	260
Oil Viscosity cSt @ 40°C	68	68	220	220	220	10	10
Minimum Timken OK Load, kg (lb)	27.2 (60 )	27.2 (60 )	27.2 (60)	27.2 (60)	27.2 (60)	.22.7 (50)	.22.7 (50)
4 Ball Wear, mm	0.5	0.5	0.5	0,5	0.5	0.5	0.5
Water Spray Off, wt%	-	-	65	65	40	70	70
Water Washout, @ 79°C, wt%	-	-	5.0	5.0	3.0	-	-
4 Ball EP, kg Weld	200	315	250	620	250	200	315
Corrosion Preventive Properties Rating	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Apparent Viscosity, P at -10°C and 20s <sup>-1</sup>	-	-	3,000	3,000	3,500	-	-
Apparent Viscosity, P at -30°C and 20s <sup>-1</sup>	5,000	5,000	-	-	-	-	-
Apparent Viscosity, P at -40°C and 20s <sup>-1</sup>	-	-	-	-	-	5,000	5,000

(1) Hand grease gun dispensing under average conditions. Automatic system limitations may be at a higher temperature.

The data above is representative of production. Some qualities are controlled by manufacturing specifications while others are not. All may vary within modest ranges.